**DN A01271A US** 

PATENT NON-FINAL

#### **CLAIM AMENDMENTS**

# Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

## **Listing of Claims:**

Claim 1 (previously withdrawn): A method comprising the steps of:

- (A) forming a capstock melt layer by a process comprising the steps of:
  - (a) forming a capstock composition;
  - (b) feeding said capstock composition into a first extruder comprising a feed section and a metering section;
  - (c) metering and melting said capstock composition to form a capstock melt;
  - (d) forming said capstock melt into a capstock melt layer; and
  - (e) extruding said capstock melt layer;

wherein said capstock composition comprises a comb copolymer comprising a backbone and at least one graft segment; and

#### wherein:

- (i) said graft segment and said backbone are in a weight ratio from 30:70 to 60:40;
- (ii) said backbone is immiscible with said graft segment at room temperature;
- (iii) said backbone has a glass transition temperature of -65°C to 10°C; and
- (iv) said graft segment has a glass transition temperature of 70°C to 180°C. Claim 2 (previously withdrawn): The method of claim 1, further comprising the following step:
  - (f) cooling said capstock melt layer to form a solid capstock layer.

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Claim 3 (previously withdrawn): The method of claim 1, further comprising the following steps:

- (B) forming a substrate melt layer by a process comprising the steps of:
  - (a) forming a substrate composition;
  - (b) feeding said substrate composition into a second extruder comprising a feed section and a metering section;
  - (c) metering and melting said substrate composition to form a substrate melt;
  - (d) forming said substrate melt into a substrate melt layer;
  - (e) extruding said substrate melt layer; and wherein said substrate composition comprises a thermoplastic polymer;
- (C) causing said capstock melt layer to contact said substrate melt layer to form a multi-layered melt composite; and
- (D) cooling said multi-layered melt composite to form a multi-layered polymeric composite, comprising a solid capstock layer disposed upon a solid substrate layer.
- Claim 4 (previously withdrawn): The method of any of claims 1, 2, and 3, wherein said step of forming said capstock composition further comprises the steps of:
  - (A) forming a macromonomer aqueous emulsion comprising a plurality of waterinsoluble particles of macromonomer, wherein:
    - (i) said macromonomer comprises polymerized units of at least one first ethylenically unsaturated monomer; and
    - (ii) said macromonomer further has:
      - (a) a degree of polymerization of from 10 to 1000; and
      - (b) at least one terminal ethylenically unsaturated group;
  - (B) forming a monomer composition comprising at least one second ethylenically unsaturated monomer;
  - (C) combining at least a portion of said macromonomer aqueous emulsion and at least a portion of said monomer composition to form a polymerization reaction mixture;

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- (D) polymerizing said macromonomer with said second ethylenically unsaturated monomer in the presence of an initiator to produce said plurality of comb copolymer particles; and
- (E) isolating said comb copolymer particles to form a solid comb copolymer.
- Claim 5 (previously withdrawn): The method of Claim 4 wherein said macromonomer is a macromonomer produced by aqueous emulsion polymerization.
- Claim 6 (previously withdrawn): The method Claim 1, wherein said comb copolymer has a weight average molecular weight of 80,000 to 2,000,000.
- Claim 7 (previously withdrawn): The method of claim 2 or 3:
  - wherein said solid capstock layer is an impact resistant capstock layer having a composition which is the same as the composition of Dropping Dart Impact specimens prepared and tested according to ASTM method D-446 with impact head configuration H.25; and
  - wherein said Dropping Dart Impact specimens have a dart impact energy of at least 2.0 joules.
- Claim 8 (previously withdrawn): The method of claim 3, wherein said thermoplastic polymer is a polymer selected from the group consisting of poly(vinyl halide), chlorinated poly(vinyl chloride), ABS terpolymer, polyaromatics, polyamides, polyesters, polyolefins, and combinations thereof.
- Claim 9 (previously withdrawn): The method of claim 8, wherein said thermoplastic polymer is a polymer selected from the group consisting of poly(vinyl chloride), ABS terpolymer, and combinations thereof.

Claim 10 (canceled)

- Claim 11 (original): A multi-layered polymeric composite comprising:
  - (a) at least one solid substrate layer comprising a thermoplastic resin; and
  - (b) at least one solid capstock layer disposed thereon, wherein said solid capstock layer comprises a comb copolymer:
  - wherein said comb copolymer comprises a backbone and at least one graft segment; and

wherein:

- (i) said graft segment and said backbone are in a weight ratio from 30:70 to 60:40;
- (ii) said backbone is immiscible with said graft segment at room temperature;
- (iii) said backbone has a glass transition temperature of -65°C to 10°C; and
- (iv) said graft segment has a glass transition temperature of 70°C to 180°C.

Claim 12 (original): The multi-layered polymeric composite of Claim 11, wherein said comb copolymer has a weight average molecular weight of 80,000 to 2,000,000.

Claim13 (original): The multi-layered polymeric composite of claim 11, wherein said thermoplastic polymer is a polymer selected from the group consisting of poly(vinyl halide), chlorinated poly(vinyl chloride), ABS terpolymer, polyaromatics, polyamides, polyesters, polyolefins, and combinations thereof.

Claim 14 (original): The multi-layered polymeric composite of claim 11, wherein said thermoplastic polymer is a polymer selected from the group consisting of poly(vinyl chloride) and ABS terpolymer.

Claim 15 (original): The composite of claim 11:

wherein said solid capstock layer is an impact resistant capstock layer having a composition which is the same as the composition of Dropping Dart Impact specimens prepared and tested according to ASTM method D-446 with impact head configuration H.25; and

wherein said Dropping Dart Impact specimens have a dart impact energy of at least 2.0 joules.